Table S1. Comparing the relapse timing between placebo (a) and PARPi (b) arms from SOLO1, PRIMA, and ATHENA-MONO trials.

	SOLO1	PRIMA		ATHENA-MONO			
	Placebo	Placebo		Placebo			
	BRCAm	HRd	Overall	BRCAm	HRd	Overall	HRp
Platinum-resistant recurrent ovarian cancer (< 6 months)	~20%	~30%	~40%	~15%	~25%	~30%	~40%
Platinum-eligible recurrent ovarian cancer (> 6 months)	~55%	~40%	~35%	~55%	~45%	~45%	~40%
Long-term responders (> 2 years)	~25%	~30%	~25%	~30%	~30%	~25%	~20%

	SOLO1	PRIMA		ATHENA-MONO			
	Olaparib	Niraparib		Rucaparib			
	BRCAm	HRd	Overall	BRCAm	HRd	Overall	HRp
Platinum-resistant recurrent ovarian cancer (< 6 months)	~5%	~15%	~25%	< 5%	~5%	~15%	~20%
Platinum-eligible recurrent ovarian cancer (> 6 months)	~45%	~35%	~40%	~35%	~45%	~55%	~55%
Long-term responders (> 2 years)	~50%	~50%	~35%	~60%	~50%	~30%	~25%

Abbreviations: BRCAm, BRCA gene-mutated; HRd, homologous recombination-deficient; HRp, homologous recombination-proficient.

Table S2. Ongoing, registered phase III RCTs for PRROC (as of November 2022).

Trial	NCT identifier	Design	Setting	Treatment arms	Primary endpoints	Estimated enrollment	ECD	Sponsor / Collaborator
A Phase 3 Study of Relacorilant in Combination With Nab-Paclitaxel Versus Nab-Paclitaxel Monotherapy in Advanced, Platinum-Resistant, High-Grade Epithelial Ovarian, Primary Peritoneal, or Fallopian-Tube Cancer	NCT05257408 GOG-3073 (ROSELLA)	Open-label, multicenter, phase III RCT	PRROC, ≤ 3 CHT lines. One prior treatment with bevacizumab is required.	**Experimental**: Nab-paclitaxel 80 mg/mq d1,8,15 Q4W + Relacorilant (SGRM) 150 mg PO OD (on the day before, the day of, and the day after nab-paclitaxel). Relacorilant will not be administered on cycle 1 day -1. **Comparator**: Nab-paclitaxel 100 mg/mq d1,8,15 Q4W.	PFS	360	June 2025	Corcept Therapeutics / GOG
A Multicenter, Randomized, Open, Parallel Controlled Phase III Clinical Trial to Evaluate the Efficacy and Safety of TQB2450 Injection Combined With Anlotinib Hydrochloride Capsules Versus Paclitaxel as Weekly Treatment in the Treatment of Recurrent Platinum-resistant Ovarian Cancer	NCT05145218	Open-label, multicenter, phase III RCT	PRROC, ≤ 4 CHT lines (no more than 1 CHT is accepted after platinum resistance)	**Experimental**: TQB2450 (anti-PD-1 mAb) 1200 mg IV Q3W (maximum 24 months) + Anlotinib Hydrochloride (TKI) 12 mg PO OD for 2 weeks Q3W **Comparator**: PTX 80 mg/mq IV QW	PFS OS	405	December 2024	Chia Tai Tianqing Pharmaceutical Group Co., Ltd.
A Randomized, Open-label, Phase 3 Study of Mirvetuximab Soravtansine vs. Investigator's Choice of Chemotherapy in Platinum-Resistant, Advanced High-Grade Epithelial Ovarian, Primary Peritoneal, or Fallopian Tube Cancers With High Folate Receptor-Alpha Expression	NCT04209855 (MIRASOL/ENGOT-ov55)	Open-label, multicenter, phase III RCT	PRROC with IHC confirmation of FRα positivity, ≤ 3 CHT lines	**Experimental**: MIRV (anti-FRa mAb) 6 mg/kg IV Q3W. **Comparator (IC):** PTX 80 mg/mq IV d1,8,15 Q4W; PLD 40 mg/mq IV Q4W; Topo either 4	PFS	430	April 2024	ImmunoGen, Inc. GOG ENGOT

				mg/mq QW or 1.25 mg/mq d1-5 Q3W				
A Multi-center, Double-blind, Randomized Phase III Clinical Trial of Chiauranib Plus Weekly Paclitaxel in Patients With Platinum-refractory or Platinum-resistant Recurrent Ovarian Cancer	NCT04921527 (CHIPRO)	Double-blind, multicenter, phase III RCT	PRROC, ≤ 2 CHT lines	**Experimental**: Chiauranib (TKI) 50 mg PO OD + PTX 60-80 mg/mq IV d1,8,15 Q3W, for 6 cycles. **Comparator**: Placebo + PTX 60-80 mg/mq IV d1,8,15 Q3W, for 6 cycles.	PFS OS	376	July 31, 2025	Chipscreen Biosciences, Ltd.
A Phase 3, Randomized, Double-Blind Study of Pembrolizumab Versus Placebo in Combination With Paclitaxel With or Without Bevacizumab for the Treatment of Platinum-resistant Recurrent Ovarian Cancer	NCT05116189 (MK-3475-B96/KEYNOTE-B96/ENGOT-ov65)	Double-blind, multicenter, phase III RCT	PRROC, ≤ 2 CHT lines	**Experimental**: Pembrolizumab 400 mg IV Q6W for 18 cycles (~2 years) + PTX 80 mg/mq IV d1,8,15 Q3W, until PD or intolerance ± Bevacizumab 10 mg/kg IV Q2W until PD, intolerance or at the investigator's discretion. **Comparator**: Placebo + PTX 80 mg/mq IV d1,8,15 Q3W, until PD or intolerance ± Bevacizumab 10 mg/kg IV Q2W until PD, intolerance or at the Investigator's discretion.	PFS	616	August 31, 2027	Merck Sharp & Dohme LLC
A Phase III, Multi-center, Randomized (1:1), Open-label, Active-controlled, Study to Assess the Efficacy and Safety of Alpelisib (BYL719) in	NCT04729387 (EPIK-O/ENGOT-ov61)	Open-label, multicenter, phase III RCT	PRROC, gBRCAwt, ≤ 3 CHT lines	**Experimental**: Alpelisib 200 mg PO OD + Olaparib 200 mg PO BID.	PFS	358	January 31, 2025	Novartis Pharmaceuticals

Combination With Olaparib as Compared to Single Agent Cytotoxic Chemotherapy, in Participants With no Germline BRCA Mutation Detected, Platinum-resistant or Refractory, High-grade Serous Ovarian Cancer				**Comparator** (IC): PTX 80 mg/mq IV QW or PLD 40-50 mg/mq IV Q4W.				
A Phase 3, Randomized, Double-Blind, Placebo/Paclitaxel-Controlled Study of Batiraxcept (AVB-S6-500) in Combination With Paclitaxel in Patients With Platinum-Resistant Recurrent Ovarian Cancer	NCT04729608 (AXLerate-OC/ENGOT-ov66)	Double-blind, multicenter, phase III RCT	PRROC, ≤ 4 CHT lines	**Experimental**: Batiraxcept (soluble AXL-IgG1 Fc fusion protein, that inhibits GAS6) + PTX **Comparator**: Placebo + PTX	PFS	350	July 2024	Aravive GOG ENGOT
A Phase 3, Multicenter, Open-Label, Randomized Study of Nemvaleukin Alfa in Combination With Pembrolizumab Versus Investigator's Choice Chemotherapy in Patients With Platinum-Resistant Epithelial Ovarian, Fallopian Tube, or Primary Peritoneal Cancer	NCT05092360 (ARTISTRY-7)	Open-label, multicenter, phase III RCT	PRROC, ≤ 5 CHT lines. One prior treatment with bevacizumab is required.	**Experimental**: Nemvaleukin (IL-2R agonist) 6 µg/kg IV d1-5 Q3W + Pembrolizumab: 200 mg IV Q3W **Experimental**: Nemvaleukin **Experimental**: Pembrolizumab **Comparator** (IC): PLD 40 mg/mq IV Q4W, PTX 80 mg/mq IV QW, Topo 4 mg/mq IV d1,8,15 Q4W (or 1.25 mg/mq d1-5 Q3W) or Gemcitabine 1000 mg/mq d1,8 Q3W	PFS	376	December 2026	Alkermes, Inc. Merck Sharp & Dohme LLC
A Randomized, Double-blind, Phase III Study of BD0801 Injection Combined With Chemotherapy Versus Placebo Combined With Chemotherapy in Patients With Recurrent, Platinum-	NCT04908787	Double-blind, multicenter, phase III RCT	PRROC, ≤ 2 CHT lines	**Experimental**: BD0801 (anti-VEGF mAb) 1.5 mg/kg IV d1,15 Q4W + PLD, PTX or Topo	PFS	357	December 2023	Jiangsu Simcere Pharmaceutical Co., Ltd.

resistant Epithelial Ovarian, Fallopian Tube, or Primary Peritoneal Cancer				**Comparator**: PLD 40 mg/mq IV Q4W, PTX 80 mg/mq IV QW, Topo 4 mg/mq IV d1,8,15 Q4W				
A Randomized Phase 3 Study Assessing the Efficacy and Safety of Olvi-Vec Followed by Platinum-doublet Chemotherapy and Bevacizumab Compared With Platinum-doublet Chemotherapy and Bevacizumab in Women With Platinum-Resistant/Refractory Ovarian Cancer	NCT05281471 GOG-3076 (OnPrime)	Open-label, multicenter, phase III RCT	PRROC, minimum 3 prior CHT lines with no maximal limit. One prior treatment with bevacizumab is required.	**Experimental**: Olvi-Vec (oncolytic vaccinia virus) IP 2 consecutive days at week 0 + Platinum-doublet + bevacizumab starting from week 4 **Comparator**: Platinum-doublet + bevacizumab starting from week 0	PFS	186	October 2026	Genelux Corporation GOG
An Open Label Randomized Study of Navicixizumab Plus Paclitaxel and Navicixizumab Monotherapy in Comparison to Paclitaxel Monotherapy in Patients With Platinum-Resistant Epithelial Ovarian, Primary Peritoneal, or Fallopian Tube Cancer	NCT05043402	Open-label, multicenter, phase III RCT	PRROC, ≥2 and ≤ 5 prior CHT lines. One prior treatment with bevacizumab is required.	**Experimental**: Navicixizumab 3 mg/kg IV d1,15 Q4W + PTX 80 mg/mq IV d1,8,15 Q4W **Experimental**: Navicixizumab **Comparator**: PTX	ORR PFS	400	August 15, 2024 (not yet recruiting)	OncXerna Theraputics, Inc.
Randomized Phase III Trial on NIraparib-TSR-042 (Dostarlimab) vs Physician's Choice CHEmotherapy in Recurrent, Ovarian, Fallopian Tube or Primary Peritoneal Cancer Patients Not Candidate for Platinum Retreatment: NItCHE Trial (MITO 33)	NCT04679064 (NItCHE/MITO33)	Open-label, multicenter, phase III RCT	PRROC, ≤ 2 prior CHT lines.	**Experimental**: Niraparib 200-300 mg OD + Dostarlimab 500 mg Q3W for the first 4 cycles and then 1000 mg Q6W **Comparator** (IC): PLD 40 mg/mq IV Q4W, PTX 80 mg/mq IV QW, Gemcitabine 1000 mg/mq d1,8,15 Q4W, or Topotecan 1.25 mg d1-5 Q3W. Bevacizumab can be added.	OS	427	January 1, 2025	Fondazione Policlinico Universitario Agostino Gemelli IRCCS GSK

Abbreviations: AXL, gene encoding for the tyrosine-protein kinase receptor UFO; ENGOT, European Network of Gynaecological Oncological Trial Groups; FR, folate receptor; GAS6, growth arrest-specific 6; gBRCAwt, germline BRCA wild type; GOG, Gynecologic Oncology Group; IC, investigator's choice; IgG, immunoglobulin G; IHC, immunohistochemical; IL-2R, interleukin-2 receptor; IP, intraperitoneal; IV, intravenous; MIRV, mirvetuximab soravtansine; mAb, monoclonal antibody; Nab, Nanoparticle albumin-bound; OD, once daily; OS, overall survival; PD-1, programmed cell death protein 1; PFS, progression-free survival; PLD, pegylated liposomal doxorubicin; PO, per os; PRROC, platinum-resistant recurrent ovarian cancer; PTX, paclitaxel; Q2W, every 2 weeks; Q3W, every 3 weeks; Q4W, every 4 weeks; Q6W, every 6 weeks; QW, once a week; RCT, randomized clinical trial; SGRM, selective glucocorticoid receptor modulator, TKI, tyrosine kinase inhibitor; Topo, topotecan; VEGF, vascular endothelial growth factor.